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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/530,271

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Hiroshi Yoshihara

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SONNENSCHN NATH & ROSENTHAL LLP
P.O. BOX 061080
WACKER DRIVE STATION, SEARS TOWER
CHICAGO, IL 60606-1080

EXAMINER

LANDAU, MATTHEW C

ART UNIT

PAPER NUMBER

2815

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/530,271

Applicant(s)

YOSHIHARA ET AL.

Examiner

Matthew C. Landau

Art Unit

2815

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 September 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 11/16/2007.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 and 2 are rejected under 35 U.S.C. 102(e) as being anticipated by Witcraft et al. (US Pat. 6,771,533, hereinafter Witcraft).

Regarding claim 1, Figure 8 of Witcraft discloses a magnetic storage device of complementary type for storing storage data in a first ferromagnetic tunnel junction element 804 and a second ferromagnetic tunnel junction element 810 (col. 5, lines 52-54 and col. 12, lines 20-22), respectively, in which said magnetic storage device using said ferromagnetic tunnel junction elements is characterized in that: said first ferromagnetic tunnel junction element and said second tunnel junction element are formed adjacently on a semiconductor substrate; a first writing lines are wound around said first tunnel junction element like a coil and said second writing lines are wound around said second tunnel junction element like a coil; wherein a winding direction of said first writing lines and a winding direction of said second writing lines are reversed with respect to each other. Note that the “winding direction” is relative to the starting/ending point of the winding process. It is essentially a product-by-process limitation that does not structurally distinguish the claimed invention over the prior art. The patentability of a product does not

depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 227 USPQ 964, 966. If a coil has two sides (side A and side B), the coil wound in a clockwise direction from side A to side B would have the same structure as if the coil were wound in a counter-clockwise direction from side B to side A. Both the first and second wiring coils can be considered to have either winding direction. Therefore, the "winding direction" limitation does not structurally distinguish the claimed invention over the prior art.

Regarding claim 2, Figure 8 of Witcraft discloses the first and second writing lines are connected at endpoints. Whether or not those endpoints are start-ends or terminal-ends depends on how the device is fabricated, meaning these limitations are merely a product-by-process limitations that do not structurally distinguish the claimed invention over the prior art. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 227 USPQ 964, 966.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are

such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Witcraft in view of Chen et al. (US Pat. 5,732,016, hereinafter Chen).

Regarding claims 3 and 4, Figure 8 of Witcraft discloses the first and second writing lines have upper and lower writing lines extending in a direction substantially perpendicular to a magnetization direction of said fixed magnetization layers, at positions above and below said first and second junction elements. The difference between Witcraft and the claimed invention is the first and second writing lines have parallel wiring portions which extend in a direction substantially parallel to a magnetization direction of fixed magnetization layers at positions immediately below said first tunnel junction element and said second tunnel junction element. Figures 8-11 of Chen disclose a magnetoresistive device with coil-shaped writing lines 80/86/87 surrounding a magnetoresistive element 84, wherein the writing lines have parallel wiring portions which extend in a direction substantially parallel to a magnetization direction of fixed magnetization layer at positions immediately below the element. In view of such teaching, it would have been obvious to the ordinary artisan at the time the invention was made to modify the invention of Witcraft by using the wiring structure of Chen for the purpose of selecting a wiring method that can be more easily fabricated.

Response to Arguments

Applicant's arguments filed September 19, 2007 have been fully considered but they are not persuasive.

Applicant argues, “Witcraft describes a memory configuration (800) having first, second, and third row lines (610, 612, and 614) that run in exactly the same direction. See Witcraft, Fig. 8. Witcraft does not describe lines that run in different directions or lines that are reversed with respect to each other”. However, the claim does not require that the lines run in different directions, or that they are reversed with respect to each other. The claim merely requires that the *winding directions* are reversed with respect to each other. As explained in the above rejection, a winding direction depends on the manner in which the coil is formed, meaning the winding direction limitation is merely a product-by-process limitation. If a coil has two sides (side A and side B), the coil wound in a clockwise direction from side A to side B would have the same structure as if the coil were wound in a counter-clockwise direction from side B to side A. Both the first and second wiring coils can be considered to have either winding direction, which means it can also be considered that the first winding direction can be reversed with respect to the second winding direction. Therefore, the “winding direction” limitation does not structurally distinguish the claimed invention over the prior art. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 227 USPQ 964, 966.

Applicant further argues, “However, contrary to the Examiner’s allegation, “lines...reversed with respect to each other” is structurally different, as pointed out above”. However, Applicant has not shown how the limitation “a winding direction of said first wiring and a winding direction of said second writing lines are reversed with respect to each other”

necessarily results in a different structure. The burden is on Applicant to show that the product-by-process limitation necessarily results in a structure different from that of the prior art.

Applicant argues regarding claim 2 that Witcraft does not disclose the limitation "a start-end portion of said second writing line is connected to a terminal-end portion of said first writing lines to be a sequence of writing lines". Applicant again appears to have ignored the Examiner's statements regarding the product-by-process language and simply argues that the claim is not anticipated because each limitation is not explicitly taught. As explained in the above rejection, the limitation in question is a product-by-process limitation that does not structurally distinguish the claimed invention over the prior art. Whether or not end points are considered start-ends or terminal-ends depends on how the coil is fabricated (i.e., from which point the coil wrapping began). However, the labels "start-end" and "terminal-end" do not necessarily result in a different structure. The burden is on Applicant to show that the product-by-process limitation necessarily results in a structure different from that of the prior art. Applicant has not met this burden.

Applicant argues regarding the 103 rejections of claims 3 and 4 that "Witcraft describes a memory configuration (800) having first, second, and third row lines (610, 612, and 614) that run from one side of elements (802, 806, or 808, figure 8) to another side in a direction that is neither parallel or perpendicular to the elements (802, 806, or 808)...". However, it should be noted that claim 4 states that the writings lines extend "in a direction *substantially* perpendicular to a magnetization direction" (emphasis added). As can be seen in Figure 8 of Witcraft, the writing lines extend in a direction that can be considered *substantially* perpendicular to the vertical direction (the magnetization direction). Applicant further argues "Chen describes a device

having lines (80 and 87) that also run from one side of an element (84, figures 8-11) to another side in a direction that is neither parallel or perpendicular to the element (84)...". The Examiner respectfully disagrees with this statement since Figures 8-11 of Chen clearly show parallel writing line portions that are parallel to the magnetization direction and other parallel writing line portions that are perpendicular to the magnetization direction. Applicant further argues that Examiner's stated motivation is based on improper hindsight. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). At no point in the instant specification does it state that the wiring configuration taught in Chen would be easier to form than that of Witcraft. Therefore, this is clearly not a case of hindsight. Applicant argues against the Examiner's motivation by stating "the "wiring method" of claims 3 and 4 requires additional shaping of material as well as additional material". Even if this were true, that still does not necessarily mean the process would be more difficult. The ordinary artisan would recognize the angled wiring portions shown in Figure 8 of Witcraft would be more difficult to fabricate than the configuration taught by Chen. Furthermore, it has been held that a prima facie case of obviousness exists when all claimed elements were known in the art and one skilled in the art could have combined the elements as claimed by known methods with no change in the respective function. *KSR International Co. v. Teleflex Inc.*, 82 USPQ2d 1385

(2007). As evidenced by Witcraft and Chen, all the claimed elements were in fact known, and the ordinary artisan could have easily combined them as claimed without undue experimentation.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

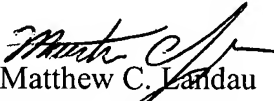
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew C. Landau whose telephone number is 571-272-1731. The examiner can normally be reached on 9:00AM - 5:30PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ken Parker can be reached on 571-272-2298. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Matthew C. Landau
Primary Examiner
Art Unit 2815
11/17/07